

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference PSD43355PCT1 | FOR FURTHER ACTION | | See Form PCT/PEA/416 |
| International application No. PCT/IB2004/001077 | International filing date (day/month/year) 25.03.2004 | Priority date (day/month/year) 25.03.2003 | |
| International Patent Classification (IPC) or national classification and IPC H04H1/00 | | | |
| Applicant NOKIA CORPORATION et al | | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 12 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (sent to the International Bureau only) a total of (Indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | | |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input checked="" type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> | | | |
| Date of submission of the demand 24.09.2004 | | Date of completion of this report 14.09.2005 | |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | | Authorized Officer Horn, R Telephone No. +49 89 2399-7780 | |



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/IB2004/001077

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-19 as published

Claims, Numbers

1-25 as published

Drawings, Sheets

1/4-4/4 as published

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/IB2004/001077

Box No. II Priority

1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2. ☒ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|---------------------------------|
| Novelty (N) | Yes: Claims | 5, 11, 15, 22, 23 |
| | No: Claims | 1-4, 6-10, 12-14, 16-21, 24, 25 |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | 5, 11, 15, 22, 23 |
| Industrial applicability (IA) | Yes: Claims | 1-25 |
| | No: Claims | |

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item II

Priority

1. The present application PCT/IB04/01077 claims priority from the application GB0306840.0 filed 25.03.2003 and published 29.09.2004 as UK Patent Application GB2399986.
However, GB0306840.0 is not the first application of the applicant for the subject-matter of **claims 1, 7, 13, 17, 19** because PCT/FI2003/000047 filed 21.01.2003 and published as WO2004/066652 discloses:
 - a method of operating a receiver, the method comprising (see figure 7):
decoding transmission parameter information from a signal
(see page 5, lines 1-5; page 8, lines 12-14; page 17, line 34 to page 18, line 4);
and determining from the decoded transmission parameter information if the signal carries time-sliced elementary streams (see page 5, lines 5-8; page 9, lines 10-23; page 11, lines 7-12; page 18, lines 4-8).
 - a receiver (see figure 5) arranged to operate in a network
(see page 14, line 26 to page 15, line 9), the receiver comprising:
a decoder for decoding transmission parameter information from a signal
(see page 8, lines 12-14; page 16, lines 28-36);
and a determiner for determining from decoded transmission parameter information if the signal carries time-sliced elementary streams (see page 9, lines 10-23; page 11, lines 7-12; page 16, line 36 to page 17, line 8).
 - a method of forming a signal for transmission, the method comprising:
creating service information (see page 6, lines 1-10); creating transmission parameter information including an indication of whether the signal carries time-sliced elementary streams (see page 6, lines 11-15; page 9, lines 10-23); and including the service information on one level (see page 6, lines 1-15) with the transmission parameter on a lower level to form the signal
(see "TPS" on page 8, lines 12-14).
 - an apparatus for forming a signal for transmission (see page 8, lines 1-11),

the apparatus being arranged for creating service information (see page 6, lines 1-10), for creating transmission parameter including an indication of whether the signal carries time-sliced elementary streams (see page 6, lines 11-15; page 9, lines 10-23), and for including the service information on one level (see page 6, lines 1-15) with the transmission parameter information on a lower level to form the signal (see "TPS" on page 8, lines 12-14).

- a transmission parameter signalling data signal comprising a predetermined number of data bits defined over consecutive orthogonal frequency division multiplex symbols (remark: OFDM is implicitly defined by the application of the DVB standard as described on page 4, lines 17-25), the data signal comprising at a predetermined location a group of one or more information bits (see page 10, line 5 to page 14, line 12) having a state dependent on whether a signal to which the data signal relates carries time-sliced elementary streams (see page 9, lines 10-23; page 11, lines 7-12).

Thus the application PCT/IB04/01077 filed 25.03.2004 is not the first application of the applicant for the subject-matter of **claims 1, 7, 13, 17, 19**. Therefore the claimed **priority from PCT/IB04/01077** filed 25.03.2004 is **not valid** for independent **claims 1, 7, 13, 17, 19** (Article 8 PCT, Article 4C of the Stockholm Act of Paris Convention).

2. The additional features of dependent **claims 2-4, 6, 8-10, 12, 14, 16, 18, 20, 21, 24, 25** are **also** disclosed in the application PCT/FI2003/000047 filed 21.01.2003 and published as WO2004/066652:
- **claims 2, 8**: see page 5, lines 5-8; lines 11-21; page 18, lines 13-27;
 - **claims 3, 12, 16, 18, 20**: see page 5, lines 22-23; page 5, line 35 to page 6, line 10; page 7, lines 10-15; page 8, lines 12-14;
 - **claims 4, 10, 14, 21**: see page 8, lines 5-7; lines 12-14;
 - **claims 6, 9**: see page 6, lines 1-15 combined with "TPS" on page 8, lines 12-14;
 - **claims 24, 25**: see argumentation and citations of claims 19-21;

Thus the application PCT/IB2003/005639 filed 28.11.2003 is not the first application of the applicant for the subject-matter of dependent **claims 2-4, 6, 8-10, 12, 14, 16, 18, 20, 21, 24, 25**. Therefore the claimed **priority from PCT/IB2003/005639** filed 28.11.2003 is **not valid** for dependent **claims 2-4, 6, 8-10, 12, 14, 16, 18, 20, 21, 24,**

25 (Article 8 PCT, Article 4C of the Stockholm Act of Paris Convention).

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. The following documents were introduced by the examiner:

D1: WO2004/066652 (NOKIA CORPORATION) 05.08.2004

D2: Ahmavaara K., Jolma P. and Raivio Y.:

"Broadcast and Multicast Services in Mobile Networks", Nokia Networks,
Published first: XVIII World Telecommunications Congress 2002
(WTC 2002), Paris, France, September 22-27, 2002

D3: Jani Väre and Matti Puputti, Nokia Ventures Organization:

"Soft Handover in Terrestrial Broadcast Networks",
Published first: IEEE International Conference on Mobile Data Management,
Berkeley, California, USA, January 19-22.2004

D4: EP1071221 (MATSUSHITA ELECTRIC INDUSTRIAL CO. LTD.) 24.01.2001

2. **Novelty objections based on document D1:**

Claims 1-4, 6-10, 12-14, 16-21, 24, 25 are not new, Article 33(2) PCT.

For the reasons see the prior art of **D1** in above paragraphs of **Re Item II Priority**.

3. **Novelty and inventive step objections based on document D2:**

3.1 **Claim 1:**

Document **D2** discloses a method of operating a receiver, the method comprising:
decoding transmission parameter information from a signal;
and determining from the decoded transmission parameter information if the signal
carries time-sliced elementary streams (see section *"Time slicing"* in paragraph 3.4;

paragraphs 4.2 & 4.4; "*Streaming delivery*" in figure 4).

The subject-matter of **claim 1** is therefore not new, Article 33(2) PCT.

- 3.2 The same considerations as made for **claim 1** also apply to **claim 7**, since **claim 7** represents the equivalent subject-matter in terms of an apparatus claim.

Therefore the subject-matter of **claim 7** is not new, Article 33(2) PCT.

- 3.3 Dependent **claims 2, 8**:

Dependent **claims 2, 8** do not add anything of inventive significance to **claims 1 and 7**. According to **D2** the receiver has to be ON only during the burst of the received service. The rest of the time the receiver can be OFF enabling power saving by disregarding the signal in the event of a negative determination (see section "*Time slicing*" in paragraph 3.4).

The subject-matter of **claims 2, 8** does therefore not involve an inventive step, Article 33(3) PCT.

- 3.4 Dependent **claims 3, 5, 11, 12**:

Dependent **claims 3, 5, 11, 12** do also not add anything of inventive significance to **claims 1 and 7** for the reason that their subject-matter is directly derivable from the disclosure of document **D2**:

- **claims 3, 12**: see paragraphs 3.3 & 4.1;
- **claims 5, 11**: see paragraph 4.4;

The subject-matter of **claims 3, 5, 11, 12** does not involve an inventive step, Article 33(3) PCT.

- 3.5 Dependent **claims 4, 10**:

Dependent **claims 4, 10** do not add anything of inventive significance to the claims they refer to for the reason that their subject-matter represents minor design modifications which are obvious to the skilled person.

The subject-matter of **claims 4, 10** does not involve an inventive step, Article 33(3) PCT.

4. Novelty and inventive step objections based on document D3:

Due to the fact that the priority for **claims 1-4, 6-10, 12-14, 16-21, 24, 25** has been found invalid, document **D3** (published after the indicated priority date, but before the filing date) constitutes prior art in accordance with Rule 64.1(b)(I) PCT.

4.1 Claim 1:

Document **D3** discloses a method of operating a receiver, the method comprising: decoding transmitting transmission parameter information from a signal; and determining from the ~~decoded~~ transmitted transmission parameter information if the signal carries time-sliced elementary streams (see paragraph 1, last two sections; paragraph 3).

Although **D3** does not explicitly refer to decoding the transmitted parameter information it is obvious for the skilled person that the signalling data must be decoded in the receiver. It is also obvious that power saving can only become effective when the decoded information is used to determine the time-sliced elementary streams that allow to switch on the receiver only at selective times.

Therefore the subject-matter of **claims 1** does not involve an inventive step, Article 33(3) PCT.

4.2 Claim 7:

The same considerations as made for **claim 1** also apply to **claim 7**, since **claim 7** represents the equivalent subject-matter in terms of an apparatus claim.

Therefore the subject-matter of **claims 7** does not involve an inventive step, Article 33(3) PCT.

4.3 Claim 13:

Document **D3** discloses a method of forming a signal for transmission, the method comprising:
creating service information (see paragraphs 2.1 & 2.2); creating transmission parameter information including an indication of whether the signal carries time-sliced elementary streams (see paragraphs 2.1 & 2.2 in combination with paragraph 3); and including the service information on one level (see figure 1) with the transmission parameter on a lower level to form the signal (see figure 1).

The disclosure of **D3** differs from the subject-matter of **claim 13** that **D3** does not further specify **on which** level of the OSI layer the information is transmitted that includes the indication whether the signal carries time-sliced elementary streams. However, the skilled person being confronted with the task on which level to transmit the time-slicing indication would **obviously** opt for a lower level which ensures a more frequent indication avoiding latency and thus improving the power saving effect of time-slicing (see paragraph 5.1).

The subject-matter of **claim 13** does therefore not involve an inventive step, Article 33(3) PCT.

4.4 **Claim 17:**

The same considerations as made for **claim 13** also apply to **claim 17**, since **claim 17** represents the equivalent subject-matter in terms of an apparatus claim.

Therefore the subject-matter of **claims 17** does not involve an inventive step, Article 33(3) PCT.

4.5 **Claim 19:**

Document **D3** discloses a transmission parameter signalling data signal comprising a predetermined number of data bits defined over consecutive orthogonal frequency division multiplex symbols (see paragraph 2.1 & 2.3), the data signal comprising ~~at a predetermined location a group of one or more~~ information bits having a state dependent on whether a signal to which the data signal relates carries time-sliced elementary streams (see paragraph 3).

The disclosure of **D3** differs from the subject-matter of **claim 19** that **D3** does not further specify at **which predetermined location a group of one or more information bits** indicate the time-sliced data. There is also no detailed disclosure whether the information bits are defined over consecutive OFDM symbols. However, this is considered a minor design feature.

The **predetermined location of a group of one or more information bits** is also obvious to the skilled person wishing to apply the principles of time slicing.

Therefore the subject-matter of **claims 19** does not involve an inventive step, Article 33(3) PCT.

4.6 Dependent 2, 3, 6, 8, 9, 12, 16, 18, 20:

Dependent **2, 3, 6, 8, 9, 12, 16, 18, 20** do not add anything of inventive significance to any of the claims they refer to for the reason that their subject-matter is directly derivable from the disclosure of document **D2**:

- **claims 2, 8:** see paragraph 1, last two sections; paragraph 3;
see also paragraph 2.3;
- **claims 3, 12, 16, 18, 20:** see paragraph 2.2;
- **claims 6, 9:** see argumentation concerning **claims 13, 17** in
above paragraphs 4.3 & 4.4;

The subject-matter of **claims 2, 3, 6, 8, 9, 12, 16, 18, 20** does not involve an inventive step, Article 33(3) PCT.

4.7 Dependent claims 4, 5, 10, 11, 14, 15, 21-25:

Dependent **claims 4, 5, 10, 11, 14, 15, 21-25** do not add anything of inventive significance to the claims they refer to for the reason that their subject-matter represents only minor design modifications which are obvious to the skilled person.

The subject-matter of **claims 4, 5, 10, 11, 14, 15, 21-25** does not involve an inventive step, Article 33(3) PCT.

5. Inventive step objections based on document D4:

5.1 Claim 1:

Document **D4** discloses a method of operating a receiver, the method comprising (see figure 7):
decoding transmission parameter information from a signal
(see "*configuration portion*" in paragraph [0014]);
and determining from the decoded transmission parameter information if the signal carries ~~time-sliced elementary streams~~ portions of relevant data (see abstract; paragraph [0014]; claims 1-3).

- 5.2 The disclosure of document **D4** differs from the subject-matter of **claim 1** by the relevant data being in defined portions of the data frames while **claim 1** specifies the relevant data in the corresponding portions of the time-sliced elementary stream. However, **D4** also provides streaming technology when transmitting DAB frames with MPEG coding (see paragraph [0007]) since MPEG coding and Orthogonal Frequency Division Multiplexing (OFDM) are common principles of both DAB and DVB. Distinguishing the portions of relevant data in the set of DAB frames results in the same kind of time-slicing of the data streams as in present **claim 1**.

Therefore the subject-matter of **claim 1** does not involve an inventive step, Article 33(3) PCT.

- 5.3 The same considerations as made for **claim 1** also apply to **claim 7**, since **claim 7** represents the equivalent subject-matter in terms of an apparatus claim.

Therefore the subject-matter of **claim 7** does not involve an inventive step, Article 33(3) PCT.

- 5.4 Dependent **claims 2, 8**:
Dependent **claims 2, 8** do not add anything of inventive significance to **claims 1 and 7**. The tuner and the receiver are powered down during the frame portions of non-relevant data as determined in the configuration portion which results in the disregarding of the signal in the event of a negative determination (see abstract; paragraph [0014]; claims 1-3).

The subject-matter of **claims 2, 8** does therefore not involve an inventive step, Article

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33(3) PCT.